COMPSCI 121 Introduction to Problem Solving with Computers
INSTRUCTOR(S): Robert Moll
4 Credits
COMPSCI 121 provides an introduction to problem solving and computer programming using the programming language Java. The course teaches how real-world problems can be solved computationally using the object-oriented metaphor that underlies Java. Concepts and techniques covered include data types, expressions, objects, methods, top-down program design, program testing and debugging, state representation, interactive programs, data abstraction, conditionals, iteration, interfaces, inheritance, arrays, graphics, and GUIs. No previous programming experience required. A companion introduction to programming class, COMPSCI 119 is also offered. If you are fairly sure you only want to do just one programming class, take that course; if you think it likely that you will do more than one programming course, take 121. Use of computer is required. Prerequisite: R1 (or a score of 20 or higher on the math placement test Part A), or one of the following courses: MATH 101&102 or MATH 104 or MATH 127 or MATH 128 or MATH 131 or MATH 132. 4 credits.

COMPSCI 187 Programming with Data Structures
INSTRUCTOR(S): Timothy Richards
4 Credits
The course introduces and develops methods for designing and implementing abstract data types using the Java programming language. The main focus is on how to build and encapsulate data objects and their associated operations. Specific topics include linked structures, recursive structures and algorithms, binary trees, balanced trees, and hash tables. These topics are fundamental to programming and are essential to other courses in computer science. The course involves weekly programming assignments, in-class quizzes, discussion section exercises, and multiple exams. Prerequisites: COMPSCI 121 (or equivalent Java experience). A grade of B or better in COMPSCI 121 (or a grade of C or better in COMPSCI 186 (or COMPSCI 190D) is required for students enrolling in COMPSCI 187 and Basic Math Skills (R1). Basic Java language concepts are introduced quickly; if unsure of background, contact instructor. 4 credits.

COMPSCI 305 Social Issues in Computing
INSTRUCTOR(S): Michelle Trim
3 Credits
Through a careful analysis and discussion of a range of computing issues, topics, and polices, we will explore various impacts of computers on modern society. This class satisfies the Junior Year Writing requirement by providing directed practice and specific instruction in a range of writing genres. Students will produce approximately 20-25 pages of polished written work over the course of the semester. Prerequisite: ENGLWRIT 112 or equivalent and COMPSCI 220 (or COMPSCI 230) and COMPSCI 240 (or COMPSCI 250). 3 credits.

COMPSCI 527 Introduction to Affective Computing
INSTRUCTOR(S): Eva Hudlicka
3 Credits
Affective computing represents a broad, interdisciplinary research and practice area focusing on a range of topics, including: computational models of emotion, cognitive-affective architectures; affective user modeling; emotion sensing and recognition; emotion expression; and the use of emotions to improve human-computer interaction across a range of contexts including intelligent tutoring and gaming. This course will provide an introduction to affective computing through a combination of lectures, student presentations of selected literature, projects and class discussion. The course content and format will be appropriate for computer science, cognitive science, psychology, human factors, and industrial engineering students (advanced undergraduate / graduate). Prerequisite: Graduate or Senior level in Computer Science or Engineering, or permission of instructor. This course counts as a CS Elective toward the CS major (BA/BS). 3 credits.

INFO 397F Special Topics - Introduction to Data Science
INSTRUCTOR(S): Gordon Anderson
3 Credits
The terms “data science” and “big data” appear in the news media and in everyday conversations. Moreover, we are told that we live in the “age of information”, where almost every business venture and scientific research initiative collect a massive amount of data which may contain valuable information. This course is an introduction to the concepts and skills involved with the collection, management, analysis, and presentation of large data sets and the data products that result from the work of data scientists. Privacy and ethical issues are discussed. Students will work with data from the financial, epidemiological, educational, and other domains. The course provides many case studies and examples of real-world data that students work with using the R programming language as well as the structured query language (SQL). This course consists of two meetings per week. Each meeting includes a lecture, where conceptual material will be presented, followed by lab time where students receive instruction on the use of software tools and apply the concepts by working on data sets. Readings will be assigned as preparation for each class meeting. Several projects will be assigned during the course. The projects provide students with an opportunity to explore the topics in more depth in a specialized domain. Two midterm exams and one final exam will be given. Grades are determined by a combination of class participation including the in-class lab activities, projects, and exam scores. Software: The R software for statistical analysis (www.r-project.org). This course does not satisfy requirements for the CS major. Prerequisites: COMPSCI 121 and PSYCH 240 (or OIM 240, or STAT 240, or STAT 515, or RES ECON 212, or SOCIOL 212) both with a C or better. 3 credits.